

REMARKS

Claims 1 through 9 are currently pending in the application.

This amendment is in response to the Office Action of February 27, 2004.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on Watts, Jr. et al. (U.S. Patent No. 6,276,589)

Claims 1 through 3 and 6 through 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Watts, Jr. et al. (U.S. Patent 6,276,589). Applicant respectfully traverses this rejection, as hereinafter set forth.

Obviousness Rejection Based on Watts, Jr. et al. (U.S. Patent No. 6,276,589) in view of Metz (U.S. Patent No. 3,641,588)

Claims 1 through 3 and 6 through 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Watts, Jr. et al. (U.S. Patent 6,276,589) in view of Metz (U.S. Patent 3,641,588). Applicant respectfully traverses this rejection, as hereinafter set forth.

Applicant asserts that to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited prior art reference must teach or suggest all of the claim limitations. Furthermore, the suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure.

After carefully considering the cited prior art, the rejections, and the Examiner's comments, Applicant has amended the claimed invention to clearly distinguish over the cited prior art.

Turning to the cited prior art, Watts teaches or suggests a jet soldering system including a solder ejector 12 for providing a continuous stream of charged solder droplets 14, deflecting plates 16, 18 for passing the charged solder droplets through to a gutter 20 or deflecting the

droplets towards a substrate and an x-y translation table on which the substrate is mounted moving the substrate during the deposition process (Fig. 1, col. 3, lines 43-48 and col. 4, lines 17-21). The ejector 12 includes heaters 32, 34 to melt solder in a cartridge 77 contained therein, a gas pressure line 44 for pressurizing the molten solder and a piezoelectric vibrator 31 to produce a standing wave in the stream of solder leaving the ejector (col. 3, line 54 - col. 4, line 5).

Turning to the three criteria of obviousness, Applicant respectfully submits that a *prima facie* case of obviousness under 35 U.S.C. § 103 cannot be established with respect to presently amended independent claim 1 because there is no teaching or suggestion in Watts to extend the method of Watts to two dimensional deflection, *the knowledge available to one skilled in the art* would also not recommend a second pair of deflection plates because the practitioner would recognize the accompanying limitation in the x and y range, there is no expectation of success for any modification of Watts because most of the x-y plane would be inaccessible, the cited prior art does not teach or suggest all the claim limitations of the presently claimed invention, and any rejection of the presently claimed invention based upon Watts would be a hindsight reconstruction of the claimed invention based solely upon Applicant's disclosure.

Applicant asserts that there is no suggestion whatsoever in Watts for any modification thereof or in the knowledge generally available to one of ordinary skill in the art. It has been asserted that it would be obvious to simply extend the one dimensional deflection method of Watts by adding a second pair of deflection plates, and thereby gain a controlled deflection in an additional dimension. It has been asserted that the addition of a second pair of deflection plates "merely a duplication of parts. The practitioner would allegedly thus arrive at Applicant's invention, which requires "selectively deflecting" the solder droplets in two dimensions. See claim 1. (Watts actually teaches a method for applying solder which gains a second dimension of controllability by moving the table, in the dimension perpendicular to the deflection direction, which supports the surface to which the solder is being applied.)

However, the method of Watts differs from Applicant's presently claimed method of presently amended independent claim 1. Watts controls the direction of falling solder droplets by controlling the charge on the droplet. See column four, lines 25 through 30 of Watts where it is

stated that “[t]he charge on each droplet controls whether the solder droplet 14 is passed undeflected toward the substrate along the y-axis while the table is moved along the x-axis. The magnitude of the charge determines the extent of deflection along the y-axis.”

Applicant, in contrast, controls the deflection of the solder droplet by varying the electric field between the deflection plates. Please see Applicant’s specification at paragraph [0020] where it states the following: “Signal controller 34 can be programmed to perform a variety of soldering patterns for placing droplets 14 on substrate 12. For example, a CAD/CAM system programmed with a desired output sends signals to ... deflection plates 36 to guide the droplet stream in the desired pattern of placing droplets in certain locations, but not in others.” Applicant has amended claim 1 to include the charging of drops.

Because Watts teaches deflection by variation of droplet charge, the practitioner cannot extend the teachings of Watts to arrive at Applicant’s invention. If Watts is modified by substituting an additional pair of deflection plates for the moving table, one of ordinary skill in the art will actually *lose* the ability to deposit solder over the entirety of the x-y two dimensional plane. It should be evident that for a given pair of potentials (one corresponding to the x deflection, the other corresponding to the y deflection) a set of droplets with charges spanning the range of all possible charges will fall on a curved line in the x-y plane, and the remainder of the x-y plane will be inaccessible. However, because Applicant teaches the variation of the electric field between the deflection plates, Applicant’s invention can easily accommodate an additional dimension with an additional pair of deflection plates without losing the ability to deposit solder over the entire x-y plane. In essence, with Applicant’s presently claimed method, the x-deflection is independent from the y-deflection, rather than having both deflections bound up with the charge on the droplet. If it were to be argued that the “knowledge available to one skilled in the art” would lead one to simply add a pair of variable potential plates to the method of Watts, the combination would still not give Applicants invention for lack of teaching or suggesting that the first pair of plates is variable potential.

Further, Watts differs from Applicant’s presently claimed invention of presently amended independent claim1. Watts moves the support on which the substrate is mounted whereas the

Applicant's presently claimed invention includes as a claim limitation "positioning a substrate on a stationary support".

Therefore, Watts cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of presently amended independent claim 1. Accordingly, presently amended independent claim 1 is allowable as well as dependent claims 2 through 9 therefrom.

Applicant further asserts that there has been and can be no showing of success for any modification of Watts because any modification of Watts would destroy the teachings of Watts. As previously stated, because Watts teaches deflection by variation of droplet charge, the practitioner cannot extend the teachings of Watts to arrive at Applicant's invention. If Watts is modified by substituting an additional pair of deflection plates for the moving table, one of ordinary skill in the art will actually *lose* the ability to deposit solder over the entirety of the x-y two dimensional plane. It should be evident that for a given pair of potentials (one corresponding to the x deflection, the other corresponding to the y deflection) a set of droplets with charges spanning the range of all possible charges will fall on a curved line in the x-y plane, and the remainder of the x-y plane will be inaccessible.

Therefore, Watts cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of presently amended independent claim 1. Accordingly, presently amended independent claim 1 is allowable as well as dependent claims 2 through 9 therefrom.

Applicant further asserts that Watts does not teach or suggest all the claim limitations of presently amended independent claim 1 to a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention. For instance, Watts does not teach or suggest the claim limitations of presently amended independent claim 1 calling for "positioning a substrate on a stationary support", "selectively directing said stream of liquid solder metal droplets in a first dimension and a second dimension, such that solder is deposited at said locations on a substrate located on a stationary support", "electrostatically deflecting said electrically charged stream of liquid solder metal droplets in a first variable electrostatic potential in said first dimension for contacting portions of a substrate located on a stationary support,"

“electrostatically deflecting said electrically charged stream of liquid metal droplets in a second variable electrostatic potential in said second dimension to said locations on said substrate located on a stationary support”, and “blanking selectively said stream of liquid solder metal droplets to prevent a portion of said stream of liquid solder metal droplets from contacting said substrate located on a stationary support”.

Therefore, Watts cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of presently amended independent claim 1. Accordingly, presently amended independent claim 1 is allowable as well as dependent claims 2 through 9 therefrom.

Additionally, Applicant asserts that any rejection of the invention of presently amended independent claim 1 would be a hindsight reconstruction of the presently claimed invention based solely upon Applicant’s disclosure, not the cited prior art because the cited prior art is devoid of any suggestion for any modification thereof. Such a rejection is neither within the ambit nor purview of 35 U.S.C. § 103 and, clearly, improper and cannot establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention.

Therefore, Watts cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of presently amended independent claim 1. Accordingly, presently amended independent claim 1 is allowable as well as dependent claims 2 through 9 therefrom.

Obviousness Rejection Based on Watts, Jr. et al. (U.S. Patent 6,276,589) in view of Doran et al. (U.S. Patent 5,585,629)

Claims 1 through 3 and 6 through 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Watts, Jr. et al. (U.S. Patent 6,276,589) in view of Doran et al. (U.S. Patent 5,585,629). Applicant respectfully traverses this rejection, as hereinafter set forth.

After carefully considering the cited prior art, the rejections, and the Examiner’s comments, Applicant has amended the claimed invention to clearly distinguish over the cited prior art.

Turning to the cited prior art, Watts teaches or suggests a jet soldering system including a solder ejector 12 for providing a continuous stream of charged solder droplets 14, deflecting plates 16, 18 for passing the charged solder droplets through to a gutter 20 or deflecting the droplets towards a substrate and an x-y translation table on which the substrate is mounted moving the substrate during the deposition process (Fig. 1, col. 3, lines 43-48 and col. 4, lines 17-21). The ejector 12 includes heaters 32, 34 to melt solder in a cartridge 77 contained therein, a gas pressure line 44 for pressurizing the molten solder and a piezoelectric vibrator 31 to produce a standing wave in the stream of solder leaving the ejector (col. 3, line 54 - col. 4, line 5).

Doran et al. teaches or suggests an electron beam metrology tool including an ambient temperature electron source and a movable stage for mounting a workpiece.

Again, turning to the three criteria of obviousness, Applicant respectfully submits that a *prima facie* case of obviousness under 35 U.S.C. § 103 cannot be established with respect to presently amended independent claim 1 because there is no teaching or suggestion in Watts or Doran et al. or any combination of Watts and Doran et al. to extend the method of Watts to two dimensional deflection, *the knowledge available to one skilled in the art* would also not recommend a second pair of deflection plates because the practitioner would recognize the accompanying limitation in the x and y range, there is no expectation of success for any modification of Watts because most of the x-y plane would be inaccessible, the cited prior art does not teach or suggest all the claim limitations of the presently claimed invention, and any rejection of the presently claimed invention based upon Watts would be a hindsight reconstruction of the claimed invention based solely upon Applicant's disclosure.

Applicant asserts that there is no suggestion whatsoever in Watts or Doran et al. or any combination of Watts and Doran et al. for any modification thereof or in the knowledge generally available to one of ordinary skill in the art. It has been asserted that it would be obvious to simply extend the one dimensional deflection method of Watts by adding a second pair of deflection plates, and thereby gain a controlled deflection in an additional dimension. It has been asserted that the addition of a second pair of deflection plates "merely a duplication of parts. The practitioner would allegedly thus arrive at Applicant's invention, which requires "selectively

deflecting” the solder droplets in two dimensions. See claim 1. (Watts actually teaches a method for applying solder which gains a second dimension of controllability by moving the table, in the dimension perpendicular to the deflection direction, which supports the surface to which the solder is being applied.)

However, the method of Watts differs from Applicant’s presently claimed method of presently amended independent claim 1. Watts controls the direction of falling solder droplets by controlling the charge on the droplet. See column four, lines 25 through 30 of Watts where it is stated that “[t]he charge on each droplet controls whether the solder droplet 14 is passed undeflected toward the substrate along the y-axis while the table is moved along the x-axis. The magnitude of the charge determines the extent of deflection along the y-axis.”

Applicant, in contrast, controls the deflection of the solder droplet by varying the electric field between the deflection plates. Please see Applicant’s specification at paragraph [0020] where it states the following: “Signal controller 34 can be programmed to perform a variety of soldering patterns for placing droplets 14 on substrate 12. For example, a CAD/CAM system programmed with a desired output sends signals to ... deflection plates 36 to guide the droplet stream in the desired pattern of placing droplets in certain locations, but not in others.”

Applicant has amended claim 1 to include the charging of drops.

Because Watts teaches deflection by variation of droplet charge, the practitioner cannot extend the teachings of Watts to arrive at Applicant’s invention. If Watts is modified by substituting an additional pair of deflection plates for the moving table, one of ordinary skill in the art will actually *lose* the ability to deposit solder over the entirety of the x-y two dimensional plane. It should be evident that for a given pair of potentials (one corresponding to the x deflection, the other corresponding to the y deflection) a set of droplets with charges spanning the range of all possible charges will fall on a curved line in the x-y plane, and the remainder of the x-y plane will be inaccessible. However, because Applicant teaches the variation of the electric field between the deflection plates, Applicant’s invention can easily accommodate an additional dimension with an additional pair of deflection plates without losing the ability to deposit solder over the entire x-y plane. In essence, with Applicant’s presently claimed method, the x-deflection is independent from the y-deflection, rather than having both deflections bound up

with the charge on the droplet. If it were to be argued that the “knowledge available to one skilled in the art” would lead one to simply add a pair of variable potential plates to the method of Watts, the combination would still not give Applicants invention for lack of teaching or suggesting that the first pair of plates is variable potential.

Further, any combination of Watts and Doran et al. differs from Applicant’s presently claimed invention of presently amended independent claim 1. Both Watts and Doran et al. move the support on which the substrate is mounted whereas the Applicant’s presently claimed invention includes as a claim limitation “positioning a substrate on a stationary support”.

Therefore, any combination of Watts and Doran et al. cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of presently amended independent claim 1. Accordingly, presently amended independent claim 1 is allowable as well as dependent claims 2 through 9 therefrom.

Applicant further asserts that there has been and can be no showing of success for any modification of Watts based upon Doran et al. because any modification of Watts would destroy the teachings of Watts. As previously stated, because Watts teaches deflection by variation of droplet charge, the practitioner cannot extend the teachings of Watts to arrive at Applicant’s invention. If Watts is modified by substituting an additional pair of deflection plates for the moving table, one of ordinary skill in the art will actually *lose* the ability to deposit solder over the entirety of the x-y two dimensional plane. It should be evident that for a given pair of potentials (one corresponding to the x deflection, the other corresponding to the y deflection) a set of droplets with charges spanning the range of all possible charges will fall on a curved line in the x-y plane, and the remainder of the x-y plane will be inaccessible.

Therefore, any combination of Watts and Doran et al. cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of presently amended independent claim 1. Accordingly, presently amended independent claim 1 is allowable as well as dependent claims 2 through 9 therefrom.

Applicant further asserts that any combination of Watts and Doran et al. does not teach or suggest all the claim limitations of presently amended independent claim 1 to a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention. For instance,

any combination of Watts and Doran et al. does not teach or suggest the claim limitations of presently amended independent claim 1 calling for “positioning a substrate on a stationary support”, “selectively directing said stream of liquid solder metal droplets in a first dimension and a second dimension, such that solder is deposited at said locations on a substrate located on a stationary support”, “electrostatically deflecting said electrically charged stream of liquid solder metal droplets in a first variable electrostatic potential in said first dimension for contacting portions of a substrate located on a stationary support;”, “electrostatically deflecting said electrically charged stream of liquid metal droplets in a second variable electrostatic potential in said second dimension to said locations on said substrate located on a stationary support”, and “blanking selectively said stream of liquid solder metal droplets to prevent a portion of said stream of liquid solder metal droplets from contacting said substrate located on a stationary support”.

Therefore, any combination of Watts and Doran et al. cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of presently amended independent claim 1. Accordingly, presently amended independent claim 1 is allowable as well as dependent claims 2 through 9 therefrom.

Additionally, Applicant asserts that any rejection of the invention of presently amended independent claim 1 would be a hindsight reconstruction of the presently claimed invention based solely upon Applicant’s disclosure, not the cited prior art because the cited prior art is devoid of any suggestion for any modification thereof. Such a rejection is neither within the ambit nor purview of 35 U.S.C. § 103 and, clearly, improper and cannot establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention.

Therefore, any combination of Watts and Doran et al. cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of presently amended independent claim 1. Accordingly, presently amended independent claim 1 is allowable as well as dependent claims 2 through 9 therefrom.

Obviousness Rejection Based on Watts, Jr. et al. (U.S. Patent 6,276,589) or Watts, Jr. et al. (U.S. Patent 6,276,589) in view of Doran et al. (U.S. Patent 5,585,629) or Metz (U.S. Patent 3,641,588) as applied to claim 3 above, and further in view of Nakasu et al. (U.S. Patent 6,213,356)

Claims 4 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Watts, Jr. et al. (U.S. Patent 6,276,589) or Watts, Jr. et al. (U.S. Patent 6,276,589) in view of Doran et al. (U.S. Patent 5,585,629) or Metz (U.S. Patent 3,641,588) as applied to claim 3 above, and further in view of Nakasu et al. (U.S. Patent 6,213,356). Applicant respectfully traverses this rejection, as hereinafter set forth.

After carefully considering the cited prior art, the rejections, and the Examiner's comments, Applicant has amended the claimed invention to clearly distinguish over the cited prior art.

Turning to the cited prior art, Watts teaches or suggests a jet soldering system including a solder ejector 12 for providing a continuous stream of charged solder droplets 14, deflecting plates 16, 18 for passing the charged solder droplets through to a gutter 20 or deflecting the droplets towards a substrate and an x-y translation table on which the substrate is mounted moving the substrate during the deposition process (Fig. 1, col. 3, lines 43-48 and col. 4, lines 17-21). The ejector 12 includes heaters 32, 34 to melt solder in a cartridge 77 contained therein, a gas pressure line 44 for pressurizing the molten solder and a piezoelectric vibrator 31 to produce a standing wave in the stream of solder leaving the ejector (col. 3, line 54 - col. 4, line 5).

Doran et al. teaches or suggests an electron beam metrology tool including an ambient temperature electron source and a movable stage for mounting a workpiece.

Metz teaches or suggests a stream of ink drops electrostatically moved in a printing course from each of a plurality of supply nozzles toward an ink receiving carrier which is moved vertically in a straight line.

Nakasu et al. teaches or suggests a bump forming apparatus and a bump forming method.

Applicant asserts that Nakasu et al. is not prior art to the claimed invention because the claimed invention of the present application has a filing date of December 12, 1997 whereas the

filing date of Nakasu et al. is September 14, 1999. Clearly, the Nakasu et al. reference is not prior art to the claimed invention of the present application.

Turning to the three criteria of obviousness, Applicant respectfully submits that a *prima facie* case of obviousness under 35 U.S.C. § 103 cannot be established with respect to presently amended independent claim 1 by any combination of the cited prior art because there is no teaching or suggestion in Watts to extend the method of Watts to two dimensional deflection, *the knowledge available to one skilled in the art* would also not recommend a second pair of deflection plates because the practitioner would recognize the accompanying limitation in the x and y range, there is no expectation of success for any modification of Watts because most of the x-y plane would be inaccessible, the cited prior art does not teach or suggest all the claim limitations of the presently claimed invention, and any rejection of the presently claimed invention based upon Watts would be a hindsight reconstruction of the claimed invention based solely upon Applicant's disclosure.

Applicant asserts that Watts does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed invention of presently amended independent claim 1 for the reasons set forth herein above.

Applicant further asserts that any combination of Watts in view of Metz or Doran et al. and in further view of Nakasu et al. does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103

Applicant asserts that there is no suggestion whatsoever in any combination of Watts in view of Metz or Doran et al. and in further view of Nakasu et al. for any modification of Watts or in the knowledge generally available to one of ordinary skill in the art. It has been asserted that it would be obvious to simply extend the one dimensional deflection method of Watts by adding a second pair of deflection plates, and thereby gain a controlled deflection in an additional dimension. It has been asserted that the addition of a second pair of deflection plates "merely a duplication of parts. The practitioner would allegedly thus arrive at Applicant's invention, which requires "selectively deflecting" the solder droplets in two dimensions. See claim 1. (Watts actually teaches a method for applying solder which gains a second dimension of controllability

by moving the table, in the dimension perpendicular to the deflection direction, which supports the surface to which the solder is being applied.)

However, the method of Watts differs from Applicant's presently claimed method of presently amended independent claim 1. Watts controls the direction of falling solder droplets by controlling the charge on the droplet. See column four, lines 25 through 30 of Watts where it is stated that "[t]he charge on each droplet controls whether the solder droplet 14 is passed undeflected toward the substrate along the y-axis while the table is moved along the x-axis. The magnitude of the charge determines the extent of deflection along the y-axis."

Applicant, in contrast, controls the deflection of the solder droplet by varying the electric field between the deflection plates. Please see Applicant's specification at paragraph [0020] where it states the following: "Signal controller 34 can be programmed to perform a variety of soldering patterns for placing droplets 14 on substrate 12. For example, a CAD/CAM system programmed with a desired output sends signals to ... deflection plates 36 to guide the droplet stream in the desired pattern of placing droplets in certain locations, but not in others."

Applicant has amended claim 1 to include the charging of drops.

Because Watts teaches deflection by variation of droplet charge, the practitioner cannot extend the teachings of Watts to arrive at Applicant's invention. If Watts is modified by substituting an additional pair of deflection plates for the moving table, one of ordinary skill in the art will actually *lose* the ability to deposit solder over the entirety of the x-y two dimensional plane. It should be evident that for a given pair of potentials (one corresponding to the x deflection, the other corresponding to the y deflection) a set of droplets with charges spanning the range of all possible charges will fall on a curved line in the x-y plane, and the remainder of the x-y plane will be inaccessible. However, because Applicant teaches the variation of the electric field between the deflection plates, Applicant's invention can easily accommodate an additional dimension with an additional pair of deflection plates without losing the ability to deposit solder over the entire x-y plane. In essence, with Applicant's presently claimed method, the x-deflection is independent from the y-deflection, rather than having both deflections bound up with the charge on the droplet. If it were to be argued that the "knowledge available to one skilled in the art" would lead one to simply add a pair of variable potential plates to the method

of Watts, the combination would still not give Applicants invention for lack of teaching or suggesting that the first pair of plates is variable potential.

Further, any combination of Watts in view of Metz or Doran et al. and in further view of Nakasu et al differs from Applicant's presently claimed invention of presently amended independent claim 1. Any combination of Watts in view of Metz or Doran et al. and in further view of Nakasu et al. moves the support on which the substrate is mounted whereas the Applicant's presently claimed invention includes as a claim limitation "positioning a substrate on a stationary support".

Therefore, any combination of Watts in view of Metz or Doran et al. and in further view of Nakasu et al. cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of presently amended independent claim 1. Accordingly, presently amended independent claim 1 is allowable as well as dependent claims 2 through 9 therefrom.

Applicant further asserts that there has been and can be no showing of success for any modification of Watts based on any combination of Watts in view of Metz or Doran et al. and in further view of Nakasu et al because any modification of Watts would destroy the teachings of Watts. As previously stated, because Watts teaches deflection by variation of droplet charge, the practitioner cannot extend the teachings of Watts to arrive at Applicant's invention. If Watts is modified by substituting an additional pair of deflection plates for the moving table, one of ordinary skill in the art will actually *lose* the ability to deposit solder over the entirety of the x-y two dimensional plane. It should be evident that for a given pair of potentials (one corresponding to the x deflection, the other corresponding to the y deflection) a set of droplets with charges spanning the range of all possible charges will fall on a curved line in the x-y plane, and the remainder of the x-y plane will be inaccessible.

Therefore, any combination of Watts in view of Metz or Doran et al. and in further view of Nakasu et al. cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of presently amended independent claim 1. Accordingly, presently amended independent claim 1 is allowable as well as dependent claims 2 through 9 therefrom.

Applicant further asserts that any combination of Watts in view of Metz or Doran et al. and in further view of Nakasu et al. does not teach or suggest all the claim limitations of presently amended independent claim 1 to a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention. For instance, Watts does not teach or suggest the claim limitations of presently amended independent claim 1 calling for “positioning a substrate on a stationary support”, “selectively directing said stream of liquid solder metal droplets in a first dimension and a second dimension, such that solder is deposited at said locations on a substrate located on a stationary support”, “electrostatically deflecting said electrically charged stream of liquid solder metal droplets in a first variable electrostatic potential in said first dimension for contacting portions of a substrate located on a stationary support;”, “electrostatically deflecting said electrically charged stream of liquid metal droplets in a second variable electrostatic potential in said second dimension to said locations on said substrate located on a stationary support”, and “blanking selectively said stream of liquid solder metal droplets to prevent a portion of said stream of liquid solder metal droplets from contacting said substrate located on a stationary support”.

Therefore, any combination of Watts in view of Metz or Doran et al. and in further view of Nakasu et al. cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of presently amended independent claim 1. Accordingly, presently amended independent claim 1 is allowable as well as dependent claims 2 through 9 therefrom.

Additionally, Applicant asserts that any rejection of the invention of presently amended independent claim 1 would be a hindsight reconstruction of the presently claimed invention based solely upon Applicant’s disclosure, not the cited prior art because the cited prior art is devoid of any suggestion for any modification thereof. Such a rejection is neither within the ambit nor purview of 35 U.S.C. § 103 and, clearly, improper and cannot establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention.

Therefore, any combination of Watts in view of Metz or Doran et al. and in further view of Nakasu et al. cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of presently amended independent claim 1,

particularly, when Nakasu et al. is not prior regarding the claimed invention. Accordingly, presently amended independent claim 1 is allowable as well as dependent claims 2 through 9 therefrom.

In summary, Applicant submits that claims 1 through 9 are clearly allowable over the cited prior art for the reasons set forth herein.

Applicant requests the allowance of claims 1 through 9 and the case passed for issue.

Respectfully submitted,



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